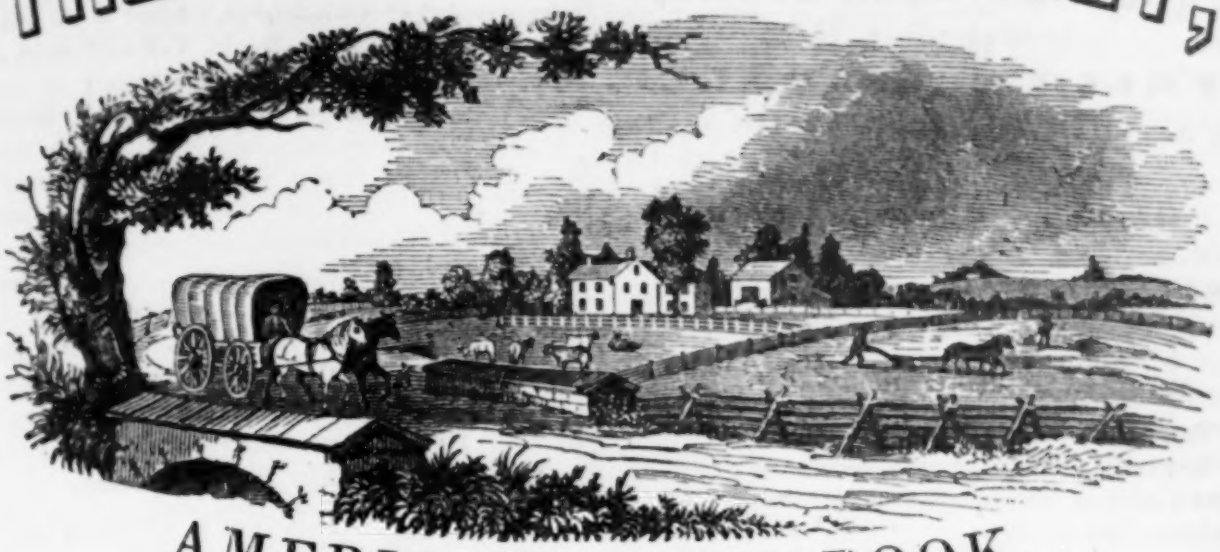
THE FARMERS' CABINET,

AND



AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

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For the Farmers' Cabinet.

What Manures does my soil Want?

It is a remark not unfrequently made,—and I think we shall be obliged to acknowledge its truth—that we apply manures to our land and seed them for crops, with far too little reference to their actual necessities in the one case, or their adaptation in the other, for the production of what we are expecting from them. For instance, we apply all kinds of manures to all kinds of soils, without asking the very important question, whether or not they are adapted to each other. We know pretty well that in stable manure, there can be no mistake; it may be used on all soils which are not absolutely wet, without any fear of its not proving beneficial, and we are therefore too apt to conclude it is even so with other manures. Animal or vegetable matters applied to the soil in the shape of manures, seldom fail to perform all we can ask of them, whether those substances be the common produce of the farm-yard, or in the shape of poudrette, or guano, or ashes, &c. The main question in relation to these, does not seem necessarily to be, will they suit the soil,—but, which is cheapest. We are told that stable manure contains everything essential to the growth of plants; it can therefore, scarcely come amiss. But it should be borne in mind, this is not the case with inorganic substances: if lime or plaster of Paris, should be applied to soils in which those substances already abound, they will of course, be of no immediate benefit; but it would be unwise in the farmer who has applied them without advantage, to conclude they would be equally useless on the land of his neighbour. It is an important point in the economy of farming, to be able to judge of the expediency of applying certain manures—I mean more particularly, those composed of inorganic matters—to particular soils. Without this knowledge, we may not only be led to entire disappointment in our expectations, but may also be involved in much unavailing expense. "None can observe," says Thompson, in his *Prize Essay on Manures*, "without a lively gratification, the important advances that have been made and are still making in the preparation and application of agricultural fertilizers. But there is still much to be learned, and still much to be forgotten. Practical agriculturists will not even yet, with a few exceptions, ask themselves, individually, the question,—What does my soil require to render it fertile?

Manures are too frequently applied without the slightest regard to the actual necessities of the soil. Nitrate of soda is applied, and because it fails in one case it is for ever condemned. Precisely so is it with numberless others. This should not be so; men should strive to make themselves as thoroughly acquainted with the constitution and wants of their soil, as with those of their animals. What would be said of the man who would give his cow or his horse something to eat without previously satisfying himself that it was wholesome? He would be pronounced a simpleton! Then how absurd to adopt this course with respect to the soil. It perhaps contains already too much of the sulphate of lime, but they apply gypsum, and wonder that it proves to be useless, nor can they imagine it will be beneficial in any other case. This must be altered before agriculturists can say they have done all that is to be done. It is all very well to reply to the unthinking, that this is a matter which only concerns agriculturists themselves, and that every man should mind his own business; *but still it is* a matter of paramount importance to *all;* whatsoever is inadvertently lost by any one agriculturist,—wheresoever he produces less by ignorance than he might by knowledge, this is a *national* loss.

"So also is it a national loss to use foreign manures when home manures would suffice. This is asserted advisedly, and notwithstanding a strong recommendation of the use of guano. Guano is certainly recommended in the absence of any sufficient home manure; but there are many sources of fertility at home which are yet but partially resorted to. We have imported large quantities of guano from Peru; and we have recently sent out an eminent scientific character to ascertain if the phosphate of Lime, in Spain, cannot be made available to the British agriculturist; but all this guano, and all this phosphate of lime, must be paid for by British wealth. This therefore is a national loss, at least it is so if there are means of obtaining efficient substitutes at home, and that there are, to a great extent, none will doubt.

"Then let agriculturists learn to ask what the soil requires, before they attempt to make an application; and let them ask also, if they have no sources of fertility untouched at home, before they resort to the indolent and unwise expedient of drawing supplies from abroad. Thus they will be benefitting themselves individually, and the nation at large; and as '*Agriculture not only gives riches to a nation, but the only riches she can call her own*,' they will be taking the necessary steps to increase the real wealth of the empire, and to promote the happiness of its people."

It has been further remarked by the author I have just quoted, that "improvement of machinery, perfection of animals, melioration of vegetables, and economy of power, all sink into insignificance compared with the application of manures." If we know not how to preserve the fertility of our lands, we must of necessity, abandon their cultivation, for we have every day's experience, that each crop more or less exhausts them. But it will naturally be asked, how are we to ascertain the adaptation of our soils to the use of particular manures? The chemist would reply, have them analyzed; but every practical man knows that this is out of the question as a general thing—it is too expensive—and would require too tedious and multiplied a process; for on many of our farms it is not unusual to find as many different soils as there are fields. For practical purposes, we would say then, institute judicious experiments, and be closely observant of their results. Does your neighbour use lime—plaster—nitrate of soda,—common salt, to advantage? and is his soil similar to your own? Then the inference is a fair one, that experiments with those substances may be safely ventured on your own lands. I have known individuals persist in the use of lime, when they were unable to perceive that it did any good, merely because their neighbours were benefitted by it. They could not comprehend why it should be, that it should be useful in one place and not in another. On some soils lime is invaluable as a manure—on others, ashes have no equal: I have known plaster on some soils, and in some seasons, to make a ton of hay to the acre, while on others it was useless; but let the farmer have no fear in relation to the increase of his barn-yard manure; he may haul in every ill weed that he can find—and every refuse article that his farm will afford him from his ditch banks or the bottom of his ponds, or his marl beds, to the leaves from his woods, and he need apply to no chemist to analyze the soil in his fields, before he ventures to haul out and spread freely.

In the early part of my article I said something about the suitableness of certain crops to particular soils, but I have already trespassed so much on the columns of the Cabinet, that I can only remark I am sensible of having frequently made mistakes in my farming operations, by not sufficiently adapting my crop to the character of the

soil on which I expected it to grow. Do my brother farmers ever make mistakes of a similar kind?

M. A.

Salem co., N. J.

Changing Bees.

The Massachusetts Ploughman says, there are various modes of transferring bees from one hive to another, but the best that we have known to be tried, is at the same time the most simple. In May or in June, if you find the moths abound in a hive, you may without much labour, drive the swarms into a new one, and thus, for a time, avoid this great destroyer of the bee.

Choose a fair day, and the hour of ten, A. M. Provide a new hive of about the same dimensions as the old one; then take the old one from its stool and set it on the ground, bottom side up, and a rod or two distant from its old place; now cap it with the new hive right side up, so as to make as good joints as you can, and wind a sheet or blanket around the two hives, at the joint, so as to prevent the escape of the bees, and tie it fast. Next, beat the sides of the old hive with sticks the size of your thumb, for ten or fifteen minutes, to make the bees quit their old hive and go up into the new one.

Now untie the blanket, and set the new hive precisely on the stand of the old one, and the bees will gather into it and make it their home. The whole operation should be in the sun, that the bees may more readily quit the old hive. You may now take out the comb and endeavour to save the lives of as many of the bees as you can. In the sun they will soon be able to fly; though they have become dashed with honey, and they will go directly to the old stand.

After the middle of June, there is more risk in driving them out, though we have known them to make honey enough for winter, after the first of July. Some bee-keepers are fearless of the stings of bees, and they handle them *without mittens*, but it is more prudent to cover your face, at the first movement, with a bit of gauze, and your hands with woollen mittens; but after a few minutes, when the bees find their house is down, they are usually very tame and will not attempt to sting; any one may handle them.

Another mode of driving bees to a new hive is, to invert the old one and set it in a tub of water, letting the water rise gradually, so as to make the bees retreat. Some bee-keepers smoke them with puff ball, or with tobacco, so as to render them stupid for a time, while removing the old hive and setting the new one on it. But this is unnecessary, in case you cover your face and hands for a few minutes, when you first remove the hive. We have often driven swarms from an old hive to a new one, without being stung.

For the Farmers' Cabinet.

Green Fodder for Cows.

Many farmers are perhaps not aware of the great amount of excellent food that may be obtained for their cows, by sowing at intervals small patches of corn or oats. I make the following extract from the *Maine Farmer*, and send it to the Cabinet, hoping it may be the means of procuring plenty for the cows of some of our farmers, which would otherwise have been obliged to go with unsatisfied stomachs.

"Those who keep but one or two cows, and have a plat of land, cannot devise a better method of furnishing them with a *good bite* of fodder occasionally, in the fall after the grass begins to decay, than by sowing some Indian corn. We have found the following plan a good one. Make drills, and fill in with manure—cover the manure over slightly, and in the drills put a quantity of Southern corn—as you would peas. Keep it free from weeds, and in the fall you can cut an armful every night and morning, for your 'kine,' which will be amply repaid to you in the extra quantity and quality of the milk.

"We have sowed the northern variety in this way, which does well, only it is earlier and will ear out—you can cut it by the last of August and first of September, and feed it ears and all. Or if you keep a *porker*, you can pull the ears for him, and give the stalks to the cow. It would be a good plan to sow some of both kinds. The northern variety would do to cut first, and the southern will come on in succession. Some recommend sowing the corn broadcast. To succeed in this way, the land should be rich and very clear from weeds, otherwise there will be a struggle, weeds *versus* corn, and ten chances to one if the weeds do not come off victorious."

There is almost every season, and on most farms, a period of scarcity, when the drought has cut up the pastures, and some contrivance is needed to keep up the necessary supply; I do not know of any plan so effectual as that recommended above. I would, however, prefer sowing the corn broadcast, rather than drilling it: the stalks would thus not grow so large, and would be better for fodder; there need be little fear of weeds, if the ground is previously in good order, and the corn is sown pretty thick. Oats

too, may be sown for this purpose to great advantage. By pursuing this plan, it may also be borne in mind, that the manure heap is materially benefitted, and perhaps more fodder obtained, than can be in any other way, from the same space of ground.

W. R.

Pasturage of Bees.

Next to the situation of the bee-hive, is the consideration of the bees' pasturage. When there is plenty of the white Dutch clover—sometimes called honeysuckle—it is sure to be a good honey year. The red clover is too deep for the proboscis of the common bee, and is, therefore, not so useful to them as is generally supposed. Many lists have been made of bee-flowers, and of such as should be planted round the apiary. Mignionette, and borage, and rosemary, and burgloss, and lavender, the crocus for the early spring, and the ivy flowers for the late autumn, might help to furnish a very pretty bee garden; and the lime and the liquid amber, the horse chesnut and the sallow, would be the best trees to plant around. Dr. Bevan makes a very good suggestion, that lemon-thyme should be used as an edging for garden walks and flower beds, instead of box, thrift, or daisies. That any material good, however, can be done to a large colony by the few plants that, under the most favourable circumstances, can be sown around a bee-house, is, of course, out of the question. The bee is too much of a roamer to take pleasure in trim gardens. It is the wild tracts of heath and furze, the broad acres of bean fields and buckwheat, the lime avenues, the hedgerow flowers, and the clover meadows, that furnish his haunts and fill his cell. Still it may be useful for the young and weak bees to have food as near as possible to their home; and to those who wish to watch their habits, a plat of bee flowers is indispensable.—*Quarterly Review.*

For the Farmers' Cabinet.

The Plough—Bee Moth.

In a communication dated at the Patent office, Jan. 31st, 1844, from Charles G. Page, Examiner of patents, to H. L. Ellsworth, Commissioner, &c., he makes the following remarks in relation to subsoil ploughing, which show that not only in our own State, but in Virginia also, is this more complete and thorough mode of tillage, beginning to be properly appreciated. As produce declines in price, the farmer will feel compelled to use every means to draw from the fields which he cultivates, the maximum of produce which they are capable of yielding: he must make up in abundance, the deficiency in price; and in order to accomplish this, we must be ready to lay hold of any improvements in the mode of cultivation, which the experiments of others may have proved to be beneficial. Statements have sometimes been made, attempting to show that the subsoil plough is advantageously used on all soils: this I do not however apprehend is the case: in the light sandy, porous and shallow soils, of some neighbourhoods, there can be no advantage in throwing up the gritty, yellow earth, beyond the ordinary reach of the plough. Indeed many of our farmers are fearful that even in their stiff clay lands, the extra cost of the process will not be compensated by any addition they may derive from it to their crop: and I would very much like to see in the Cabinet, the results of some actual experiments in subsoiling, by which we might be enabled to form a decided judgment of its profitableness, or otherwise. For corn, and wheat and rye, turnips, beets, &c., the impression is favourable to subsoiling—but the grand question to the practical farmer, who makes his living by his business, is not so much—will it increase my crop? but will it increase it sufficiently to compensate me for the extra expense?*

"A variety of plough," says the communication above referred to, "particularly deserving of notice, is the Anti-friction wheel plough, invented first in England, in 1814, and but recently introduced here, with important modifications. The friction, or more properly, anti-friction wheel, is placed in the rear part of the plough, and saves the friction and wear of the sole, and also answers

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* After all, our correspondent has struck upon the true spirit of the inquiry to be made by the "farmer who makes his living by his business." It is an easy matter for the man who has plenty of money, to enrich his land—he may make it as productive as he will, and there is but little merit, comparatively, in his farming well: but to the man who has his family to support—his rent to pay—or his mortgaged farm to redeem, the question is all-important—how shall my lands be improved advantageously to my interests? what manures are cheapest, and best adapted to my soils? what crops will suit them, and be most profitable in reference to the markets on which I depend? Here is abundant room for the exercise of a sound and discriminating judgment, as well as for the untiring inquiries of one who is disposed to give his energies understandingly to his occupation. It was long ago said—and the triteness of the remark has neither diminished its truth, nor narrowed the breadth of its application—"knowledge is power:" and we could point among our agricultural friends to numerous instances, illustrative of the proposition.—Ed.

the purpose of steadying the plough in unskilful hands. There have also been recently several important improvements in other varieties of ploughs; such are the Subsoil, the Double and Quadruple, and the Side-hill ploughs. The Subsoil plough is getting into general use in the United States, and the thorough farmer now considers it indispensable, in order to complete his operations. It has proved eminently useful, both in wet and dry soils—in wet, by draining superfluous moisture; and in dry, by facilitating the descent of the roots of such plants as delight in deep soils. Its efficacy also in actually improving the character and depth of soils where proper tillage has been maintained, has been abundantly proved, and perhaps nowhere more signally than in resuscitation of the sterile lands, exhausted by tobacco culture, in Virginia. I speak from my own observation of its wonderful utility in a neighbouring county,—Fairfax—and have the corroborating testimony of the distinguished judge of that circuit, who declared some time since, that Fairfax, from being proverbially one of the poorest, was fast becoming one of the most fertile counties of Virginia; and this change has been wrought by the immigration of northern farmers, bringing with them all their agricultural enterprise and knowledge of what may be properly called the mechanics of agriculture."

In the same communication, I find the following remarks in relation to bees, and their great enemy, the *moth*. Patents are from time to time granted for preventing the ravages of the wheat fly and other insects which are destructive to the crops, or annoying to the farmer, but most of them are too complicated and extensive for general use.

"No branch, perhaps, of agricultural, or rather rural occupation, has been so much neglected in this country, as *bee culture*. Wherever it has been attempted with care, it has always proved profitable; but many who engage in this business, abandon it—for the reason that the bee is left to be its own protector against its many enemies, but more particularly against its common enemy, the bee moth. A large number of applications for patents have been made for improvements in bee-hives, most of them with reference to this very point, viz: protection against the moth; and it might be reasonably inferred, from the fact that applications are continually being made for this purpose, that no complete remedy has been devised.

"From the character of many of the inventions, it is obvious that the habits of this insect are not studied; and it is to be regretted that, while naturalists and apiarians have so long investigated and made themselves familiar with the domestic habits and whole economy of bees, they have neglected to notice this their predatory, and ultimately fatal enemy. In Virginia, it is a common practice to put the hives upon the ground, as a security from the moth; and I can testify to the fact, that bees in well made hives, protected by a covering from rain and excessive heat, under these circumstances thrive well. The eggs of the bee-moth are deposited usually somewhere about the base of the hive, and, after hatching, the larvæ crawl into the hive and commence their work of destruction. It is presumed that the instinct of the insect leads it to deposite its eggs in dry and warm places, and consequently to avoid the ground. The hive is placed upon tiles or bricks, to prevent the approach of mice, &c.

"The bee readily adapts itself to every climate; and although its period for labour is abridged in the more northern latitudes, yet it seems to thrive equally well whereever it can find an abundance of food. An esteemed friend, H. K. Oliver, Esq., of Salem, Massachusetts, has been singularly successful in this culture. I have not space for a detail of his peculiar mode of management, were such proper for this report; but I may state its result. This gentleman, the care of whose apiary is merely a relaxation from graver pursuits, has taken 300 pounds of honey per annum, from three hives; and the average for each of his hives for several years past, has not been less than 80 pounds. In 1840, he took from one hive, 140 pounds, and left 60 pounds for the bees to winter upon. It is obvious that such continued success cannot be merely fortuitous, but must be the result of proper care and contrivance. As the importance of this culture is underrated, or, more properly speaking, but little known, I may be thought to have bestowed more attention to the subject than it deserves. Among the articles, however, which go to swell the aggregate of the annual exports of our country, beeswax forms no inconsiderable item at this time, and is capable of being very largely extended."

There were in 1842, more than three hundred thousand pounds of wax exported, valued at $103,626.

The bee is indeed, too frequently left to be its own caretaker: but I am satisfied that those who watch their hives, familiarizing themselves with the admirable economy of this admirable creature, will not only be delighted in contemplation of the perfectness of its instinct, but will also be well repaid for the care extended to it. The

bee, like other domesticated creatures, relies upon man for help and protection; and it is certainly entitled to it. After being forced from the solitude and securities of its native forest, it may well claim all possible protection from the increased dangers to which civilization exposes it. M. R.

Lancaster co., Pa.

Preserving Butter.

Hartford, June 12th, 1844.

Sir:—In answer to your inquiry, What has been your practice in putting up butter, especially for preservation in hot climates, or for long voyages? I will cheerfully state that I have had considerable experience on this subject, and in some particulars, good success. There are many things required to insure good butter. The butter itself must be well made; that is, worked enough, and not too much, and salted with rock salt. This being well done, and the buttermilk all expelled, the butter may be packed in good, white-oak, well seasoned casks, well filled. In cool climates larger casks can be used. In hot climates it is best to have small casks —say from 25 to 30 lbs.—so that too much need not be exposed while using. Then put these small casks into a hogshead, and fill up the same with strong pickle that will bear an egg, and the butter may be shipped to the West Indies or Europe, and kept perfectly sweet. I have never found saltpetre or sugar of any benefit. Butter of my packing has opened as good in the West Indies, as it was in Connecticut. I will remark, that to keep butter in ice-houses, when it remains frozen, will answer, if the butter is to be continued in the same temperature; but if it is exposed to warm weather after being taken from the ice-house, it will not keep as long as if it had not been exposed to so cold a temperature.

Yours, respectfully, G. Fox.

Hon. H. L. Ellsworth,
Commissioner of Patents.

Saw-Mills.

The English gentleman who introduced the use of mahogany, by causing a candle-box to be made of it, gave the world a great luxury; but he who invented the saw-mill, performed an act far more serviceable. A mahogany tree, when in logs, has been sold for nearly fifteen thousand dollars;* a pine, which will produce a hundredth part of that sum, in the most distant market, is of rare size and quality; but to the mass of mankind, it is more valuable than the other, because it is, what that is not, a necessary of life. The sawing of trees by machinery, is not, probably, of remote origin. The first saw-mill of which we have any knowledge, was erected at Madeira, in the year 1420: and we hear of another at Breslau, seven years later; but their multiplication in different parts of Europe, appears to have proceeded slowly. A mill of this description was built near London, in 1633; but it was demolished soon afterwards, that it might not be a means of depriving the poor of employment. About a century later, a branch of the York Building Company made large purchases of pine timber, erected mills, and introduced various improvements in the manufacture and transportation of lumber. But the popular feeling against machine-saws was still strong. A saw-mill set up at Limehouse, near the year 1768, was destroyed by a mob. The first built in New England—and very likely in America—was at "Agamentico,"* in Maine, in 1623, or the year following, under the direction of Sir Ferdinando Gorges. "I sent over my son," says the Lord Palatine, "and my nephew, Capt. William Gorges, who had been my lieutenant in the fort of Plymouth, with some other craftsmen, for the building of houses and erecting of saw-mills." The next, probably, were on the Piscataqua, as the settlers there had one or more in motion as early as 1630; at which time, there were no grist-mills, and the lumberers procured their bread-stuffs prepared for baking, either from England or Virginia. The first mill in Massachusetts, seems to have been that on the Neponset, in Dorchester, in 1633; but whether it was built for grinding or sawing, cannot be ascertained. The earliest for sawing, in the colony of Plymouth, we suppose to have been on the Herring brook, Scituate, erected in 1656, and destroyed twenty years afterwards by the Indians. There was one on the Saco, as soon as the year 1653, and one on Mill river, Taunton, six years afterwards. By the year 1681, there was a second in Plymouth Colony, at Swansea; and in 1685, as many as four were in operation at Cape

* The highest price that we have known to be paid in this country, was at about the rate of five thousand dollars for a tree in log; the one referred to in the text was purchased for £3,000, in England, by a celebrated piano forte manufacturer. Of the pine, a plank nearly six feet in width, made from a tree which grew on the estate of the Duke of Gordon, is preserved in that nobleman's castle as a curiosity. In Maine, pines six feet in diameter near the ground, have sometimes been found, while those of four feet diameter are not uncommon.

† The ancient name of York.

Porpoise, Maine. Of those in Maine, at more recent dates, we may mention mills on the Androscoggin, at Brunswick, in 1716; at Damariscotta, under grants from Dunbar, in 1730; a mill at Bucksport, on the Penobscot, in 1764; and several on the different branches of the Machias, before 1775.*

The curious terms annexed to "libertie" to make boards and planks by water power, in the olden time, are well worth a moment's attention. In the grant of the "townsmen of Saco," to Roger Spencer, it was stipulated, that he should build his mill within a year, that all the "townsmen should have bordes twelve pence in a hundred cheaper than any stranger," and that the townsmen who would "worke" in erecting the mill "as cheap as a stranger," should have the preference. In a subsequent grant to another person, much the same conditions are imposed, and the further one, that the grantee should buy his provisions of townsmen at "price current," rather than of others. The conditions required by the people of Scituate, in good "old Plymouth," we will give as they stand upon the record.

"At a full town meeting of the town of Scituate, November 10th, 1656, free liberty was this day granted to any man or men of the town, to set up a saw-mill upon the third herring brook, as near the North river as conveniently it may be, on these conditions, namely; that in case any of the townsmen do bring any timber into the mill to be sawed, the owners of the mill shall saw it, whether it be for boards or plank, before they saw any of their own timber, and they are to have the one half for sawing of the other half. And in case any man of the town, that doth not bring any timber to the mill to be sawed, shall want any boards for his own particular use, the owner of the mill shall sell him boards for his own use, so many as he shall need, for the country pay, at three shillings and six pence an hundred inch sawn; but in case the men of the town do not supply the mill with timber to keep it at work, the owners of the mill shall have liberty to make use of any timber upon the common, to saw for their benefit. The said saw-mill to be built within three months from this date; otherwise, this order to be void."

At Taunton, on the proposal to erect a mill there, liberty was given on the condition that it "be not found hurtful to the grist-mill." At Cape Porpoise, a town meeting gave the right to set up a saw, provided it was done "within sixteen months, unless prevented by war;" and the applicant furnished his townsmen with lumber for their own use, at "twelve pence the hundred under price current." Another person, at the same place, was required to pay "forty shillings rent, as a tax to support Fort Loyal, at Falmouth;" and a third had his request granted, by paying "a yearly rent of fifty shillings," and allowing "the inhabitants to saw their own boards at the halves."

* * * * * * * *

The experience of the Old World is full of admonition, and should not be lost upon us. The mountains of Lebanon, to which Solomon sent his "fourscore thousand hewers," have been long stripped of their beautiful "cedars." The period is not very remote since pines were so abundant in Great Britain, that a woodman could procure the right to use a single axe in cutting them down, for less than one dollar a year; and, not two centuries and a half ago, wood was the common fuel in most parts of England. In Queen Elizabeth's time, it is said that Spain sent over a special ambassador, charged with the duty of procuring, by negotiation or treachery, the destruction of oak trees in the celebrated forest of Dean. However this may be, the oaks disappeared by improvidence during the civil wars. Within one hundred and fifty years, a considerable part of the elevated regions of the north of Ireland was covered with pines, of which hardly a vestige now remains. A forest set apart for the royal navy, contained, at the end of a century, only one-tenth part of the timber which the officers in the care of it reported at its commencement; nor was alarm felt, nor means taken to replant it, until the quantity was still less. In Europe generally, at the present time, it is believed that woodlands are diminishing with great rapidity. It is supposed, that in Germany, Sweden, Norway, and Russia, one third of the surface is still covered with forests of more or less value; but the proportion in the other principal countries is not so large. In France, we have certain knowledge, that immense inroads are made on the woods from year to year, because she cuts from her forests not only timber, but nearly all her fuel. Of the northern nations, it is necessary only to remark, that they are the makers of tar and providers of timber for England, and such other powers as have become importers of the articles once abundant at home.

That in America,—a country of stumps and newly cleared lands,—apprehensions should be expressed, as to our capability of furnishing ourselves with timber in all coming time, will excite a smile on the faces of many. Be it so. John Jay, a man as wise

* The *first* on the Machias, was undoubtedly as early as 1763, and within a year after the first grant of land and mill-sites east of the Penobscot.

as the wisest, and as good as the best, thus wrote to Washington, more than fifty years ago. "There is some reason to apprehend that masts and ship-timber will, as cultivation advances, become scarce, unless some measures be taken to prevent their waste, or provide for the preservation of a sufficient fund of both." And this passage has the more weight, since it occurs in a letter devoted to the suggestion of measures necessary to be brought forward for the good of the country.—*N. American Review, April*, 1844.

Of the substances of which the parts of animals consist.

The bodies of animals consist of solid and fluid parts.

The *solid* parts are chiefly made up of the muscles, the fat, and the bones.

The *muscles*, in their natural state, consist in 100 parts of about

Dry matter,	23
Water,	77
	100

so that, to add 100 lbs. to the weight of an animal *in the form of muscle*, only 23 lbs. of solid matter require to be incorporated with its system.

When the muscular or lean part of beef, mutton, &c., is washed in a current of water for a length of time—the blood, to which the red colour is owing, and all the soluble substances gradually disappear, and the muscle becomes perfectly white. In this state, with the exception of some fatty and other matters which still remain intermixed with it—the white mass forms what is known to chemists by the name of *fibrin*. This name is given to it because it forms the fibres which run along the muscles and constitute the greater portion of their substance.

When dried beef is burned it leaves about four and a half per cent. of incombustible ash—or 100 lbs. of the muscle of a living animal in its natural state, contain about one pound of saline or inorganic matter.

Of this inorganic matter, it is of importance to know that *about two thirds consist of phosphate of lime*. Thus to add 100 lbs. to the muscular part of a full grown animal, there must be incorporated with its substance about

Water	77 lbs.
Fibrin, with a little fat	22 —
Phosphate of lime	½ —
Other saline matters	½ —
	100

The fat of animals consists, like the fat of butter, of a solid and fluid portion. The fluid fat is in great part squeezed out when the whole is submitted to powerful pressure.

The *fluid portion* of the fat, called by chemists *oleine*, so far as it has yet been examined, appears to be identical in all animals. It is also the same thing exactly as the fluid part of olive oil, of the oil of almonds, and of the oils of many other fruits. It exists in larger quantity in the fat of the pig than in that of the sheep, and hence pork fat is softer than beef or mutton suet. From lard it is now expressed on a great scale in the United States of America, for burning in lamps and for other uses. The manufacturers of stearine candles express it from beef and mutton fat, but chiefly for the purpose of obtaining the solid part in a harder state, that it may make a more beautiful and less fusible candle. The fluid oil of animal fats, however, is known to differ from the liquid part of butter (*butter-oil*) and from the fluid part of linseed and other similar oils which dry, and form a kind of varnish when exposed to the air. These latter facts are not without their importance.

The *solid part* of the fat of animals is known to vary to a certain extent among different races. Thus the solid fat of man is the same with that of the goose, and with that which exists in olive oil and in butter. To this the name of *margarine* is given. But the solid fat of the cow, the sheep, the horse, and the pig, differs from that of man, and is known by the name of *stearine*.

The solid and fluid parts are mixed together in different proportions in the fat, not only of different animals, but of the same animal at different periods, and in different parts of its body. Hence the greater hardness observed in the suet than in other portions of the fat of beef and mutton, and hence also the different quality and appearance of the fat of an ox according to the kind of food upon which it has been fed or fattened.

The bones, like the muscles, consist of a combustible and an incombustible portion, but in the bones the inorganic or incombustible part is by much the greater. To the organic matter of bones the name of *gelatine* or glue is given, and it can be partly extracted from them by boiling. The proportion of gelatine which exists in bones, varies with the kind of animal—with the part of the body from which the bone is taken—and very often with the age and state of health of the animal, and with the way in which it has been accustomed to be fed. It is greater in spongy bones, in the bones of young animals, and probably also in the bones of such as are in high condition. In perfectly dry

bone, it rarely exceeds from 35 to 40 per cent. of the whole weight.

The incombustible portion consists for the most part of phosphate and carbonate of lime. The relative proportions of these two earthy compounds also vary with the kind of animal, with its age, its condition, its food, and its state of health. To form 100 lbs. of bone, the animal will usually require to incorporate with its own substance *about*

35 pounds of gelatine,	
55 pounds of phosphate of lime,	
4 pounds of carbonate of lime,	
3 pounds of phosphate of magnesia,	
3 pounds of soda, potash, and common salt.	
100	

Hair, horn, and wool, are distinguished from the muscular parts of the animal body by the large proportion—about five per cent.—of sulphur which they contain. They consist of a substance which in other respects closely resembles gluten and gelatine in its chemical composition. When burned, they leave from one to two per cent. of ash, which in the case of a variety of human hair, which left 1.1 per cent. of ash, was found by Van Laer to consist of

	Per cent.
Soluble chlorides and sulphates	0.51
Oxide of iron	0.39
Phosphate and sulphate of lime, Phosphate of magnesia and silica	0.20
	1.10

The inorganic matter contained in hair, is therefore, generally speaking, the same in kind as that which exists in the muscular fibre and in the bone. It contains the same phosphates of lime and magnesia—the same sulphates and the same chlorides, among which latter common salt is the most abundant. The absolute quantity of ash or inorganic matter varies, as well as the relative proportions in which the several substances are mixed together in the different solid parts of the body, but the substances themselves of which the inorganic matter is composed are nearly the same, whether they be obtained from the bones, from the muscles, or from the hair.

Of *the fluid parts* of the body, the blood is the most important, and by far the most abundant. The body of a full grown man, of moderate dimensions, contains about 12 lbs. of blood,* that of a full grown ox, six times as heavy, cannot contain less than 70 or 80 lbs. *Blood* consists of about

	Per cent.
Water	80
Organic matter	19
Saline matter	1
	100

The organic matter consists chiefly of *fibrin*, which, when the blood coagulates, forms the greater part of the clot—and of *albumen*, which remains dissolved in the serum or fluid part of clotted blood, but which, like the white of egg, runs together into insoluble clots when the serum is heated.

The saline matter remains dissolved in the serum after the albumen has been separated by heating, and consists chiefly of phosphates, sulphates, and chlorides—nearly the same compounds as exist in the soluble part of the ash left by the solid parts of the body.

Besides this soluble saline matter which remains in the serum, a portion of phosphate of lime and a small quantity of phosphate of magnesia exist also in the fibrin and in the albumen of the blood. Thus in the dry state these substances contain respectively of the mixed phosphates

Albumen of ox blood	1.8 per cent.
Fibrin of human blood	0.7 per cent.

(Berzelius.)

Thus the same saline and earthy compounds, which form so large a portion of the bones, are distributed every where in sensible proportions throughout all the more important solids and fluids of the body.

Whence does the body derive all the substances of which its several parts consist?

The answer to this question appears at first sight to be easy. They must be obtained from the food. But when the inquiry is further considered, a reply to it is not so readily given.

It is true, indeed, that the organic part of the food contains carbon, hydrogen, oxygen, and nitrogen—the elements of which the organic parts of the body are composed. The *in*-organic matter also which exists in the food contains the lime, the magnesia, the potash, the soda, the sulphur, the phosphorus, and the iron, which exist in the inorganic parts of the animal body—so that the question seems already resolved. The body obtains from the food all the elements of which it consists, and if these be not present in the food, the body of the animal cannot be properly built up and supported.

But to the chemist and physiologist, the more important part of the question still remains. *In what state do these elements enter into the body?* Are the substances of which the food consists decomposed after they are taken into the stomach? Are their parts first torn asunder, and then reunited in a different way, so as to form the chemi-

* Lehmann, *Physiologische Chemie*, I., pp. 113 and 338.

cal compounds of which the muscles, bones, and blood, consist! Are the vital powers bound to labour, as it were, for the existence and support of the body? Do they compound or build up out of their ultimate elements the various substances of which the body is composed—or do they obtain these substances ready prepared from the vegetable food on which animals, in general, are fed? The answer which recent chemical researches give to this second question, forms one of the most beautiful contributions which have been made to animal physiology in our time.

The flour of wheat and of our other cultivated grains, consists in part of gluten, of albumen, or of casein. These substances all contain nitrogen, and are identical in constitution with each other, and with the fibrin of which the muscles of animals chiefly consist.* The substance of the muscles exists ready formed, therefore, in the food which the animal eats. The labour of the stomach is in consequence restricted to that of merely selecting these substances from the food and despatching them to the several parts of the body, where they are required. The plant compounds and prepares the materials of the muscles—the stomach only picks out the bricks, as it were, from the other building materials, and sends them forward to be placed where they happen to be wanted.

Again, in all our crops, so far as they have been examined, there exists a sensible proportion of fatty or oily matter more or less analogous to the several kinds of fat which exist in the bodies of animals. In regard to this portion, therefore, of the body, the vegetable performs also the larger part of the labour. It builds up fatty substances out of their elements—carbon, hydrogen, and nitrogen. These substances the stomach extracts from the food, and the body appropriates them—after they have been more or less slightly changed, in order to adapt them to their several purposes. There may possibly be other sources of fat, but the simplest, the most natural—and probably, where a sufficient supply exists, the only one had recourse to by the healthy animal—is the fat which is found, ready formed, in the vegetable food it eats.

Further, the bones, the muscles, and the blood, contain phosphate of lime, phosphate of magnesia, common salt, and other saline compounds. These same compounds exist, ready formed, in the vegetable food, associated generally with the gluten, the albumen, or the casein, it contains. The materials of the harder parts of the body, therefore (the phosphates) as well as the inorganic saline substances which are found in the blood, and in the other fluids of the body—are all formed in or by the plant, or are by it extracted from the soil and incorporated with the food on which the animal is to live.

Not only, therefore, do the mere elements of which the parts of the bodies of animals are formed, exist in the food—but they occur in it, put together and combined, nearly in the state in which they are wanted in order to form the several solids and fluids of the body. The plant, in short, is the compounder of the raw materials of living bodies. The animal uses up these raw materials—cutting them into shape when necessary, and fitting them to the several places into which they are intended to be built.

This is a very simple, and yet a very beautiful view of one of the many forms of chemical connection which exist between the processes and purposes of animal and vegetable life. Nature seems to divide the burden of building up living bodies between the vegetable and the animal kingdoms—the lower appearing to exist and to labour, only for the good of the higher race of beings.—*Johnston's Lectures.*

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* The chemical reader, who is aware of the exact state of our knowledge upon this subject, will perceive that I speak here of the identity of these substances only in so far as the proportions of carbon, hydrogen, oxygen, and nitrogen, are concerned. It is unnecessary to allude in this place, to the different proportions of sulphur and phosphorus they are known to contain—as the more popular nature of this work will not permit me to discuss the refined, though singularly beautiful, physiological questions with which these differences are connected.

Carpets.—The oftener these are taken up and shaken, the longer they will wear, as the dust and dirt underneath grind them out. Sweep carpets with a stiff hair brush, instead of *an old corn broom*, if you wish them to wear long or look well. At any rate, keep a good broom purposely for the carpet.

To Polish Mahogany Furniture.—Rub it with cold drawn linseed oil, and polish by rubbing with a clean dry cloth, after wiping the oil from the furniture. Do this once a week, and your mahogany tables will be so finely polished that hot water would not injure them. The reason is this, linseed oil hardens when exposed to the air, and when it has filled all the pores of the wood, the surface becomes hard, and smooth like glass.

To make corks for bottles.—Take wax, hog's lard, and turpentine, equal quantities, or thereabouts. Melt all together, and stop your bottles with it.

Morse's Electro Magnetic Telegraph.

In our last number a promise was made to recur to this subject again. The following article, taken from the Baltimore Patriot, gives a more detailed description of the apparatus, than any that we have seen. An excellent description, with explanatory cuts, is also given in Ellsworth's Annual Report, lately published.

In the paper given below, and indeed in all we have seen on the subject, the electric fluid is spoken of, as *flying* along the extent of the conducting wire, as if the identical spark communicated at Washington, was the one which performed the desired office at Baltimore; and calculations have been made in relation to its velocity, and the time it would require to pass over a certain distance. On this matter we take from the United States Gazette of the 19th of Fourth month last, an extract from a communication made to that paper by INDEX, whose name we have occasionally had the pleasure of seeing in our columns.

"The truth, I suppose to be," says INDEX, "that *no time* is occupied by the transmission of the fluid in this experiment; and I cannot better illustrate the phenomenon than by referring to the means used by the only man whom I have ever known satisfactorily to explain it. Some thirty-five years since, the writer of this was permitted to spend an hour with the venerable sage, while he indulged in the luxury of a long new pipe, nicely tipped with wax, after dinner; his conversation, always instructive, was now on electricity. 'All bodies,' said he, 'I suppose, contain their natural portion of this fluid, and, like a vessel filled with water, no more can be added without the simultaneous escape of an equal portion it previously contained, and hence no time is required for its transmission by a conductor in our electrical experiments; for however long the rod may be, being already full, it can contain no more, except it be insulated; hence when an additional quantity is forced into one end, a like quantity of that which it previously contained is expelled from the other, thus'—suiting the action to the words—'if I place this pipe on the table, and putting my finger on this end, shove it along, you see the other end moves at the same time.'

"If this be true, how simple and beautiful is the truth, and how idle the attempt of philosophers to estimate the time required for the transmission of this fluid under such circumstances."

The idea expressed above, of the escape of a spark at the one end, simultaneously with the introduction of one at the other, however simple it may be, is, we acknowledge new to us, and strikes us as particularly beautiful; and we are unable to perceive but that it is competent to explain the phenomenon, so far as *time* is involved, more satisfactorily than it is done in the books, by supposing the fluid to *pass along* the wire.

Foreigners are now claiming the merit of this invention—something similar to it is reduced to practice on the great Western Railway in England, and it is impossible to calculate the purposes to which it may be made subservient. In the hurry of action during the last hours of Congress, we regret that no appropriation was made for its purchase of Professor Morse, or otherways in relation to it.—ED.

A variety of statements in reference to the peculiar construction and *modus operandi* of this wonderful and admirable machine, now in successful operation between Baltimore and Washington, has been published in various journals throughout the United States. Many of these descriptions convey but a partial and inaccurate idea of the Telegraph as it really is, and some of them have led to positive error. That the curious and scientific may have a just conception of this admirable and astounding triumph of art, we have collected facts from sources to be relied on, and prepared the following statement:

The generator of the galvanic fluid, consists of fifty glass tumblers, of the size in common use, in each of which is a zinc hollow cylinder, reaching from the top to the bottom of the glass, and almost filling it up. From the top of the zinc cylinder projects a horizontal arm of the same metal, extending two inches beyond, to which is soldered platinum foil, three and a half inches long and half an inch wide, and hangs vertically from the end of the arm. In the hollow of the zinc cylinder is placed a small porous cup, three inches long and one and a quarter inch in diameter. The glass tumbler is then filled with dilute sulphuric acid, and then the small cup filled with pure nitric acid. Being thus prepared, the platinum of one glass is put into the small porous cup of the other, and so on through the whole series. The last glass at one end of the row, has its platinum soldered to a strip of copper, which terminates in a cup of mercury in the platform upon which the glasses stand. At the other end, the projecting arm has also a copper strip soldered to it, and terminates in a cup of mercury in the same manner as the other end. These two ends constitute the negative and positive poles of the battery, which is at Washington.

From one end of these cups of mercury proceeds a copper wire, of the size of common bell wire, extending to Baltimore, upon poles 25 feet high and 225 feet apart. Here it enters the Telegraph office, and passes around first one prong of a bar of iron, bent in the form of a horse-shoe, and from that around the other prong, and then the wire returns to Washington upon the same poles

as the other. At Washington the return wire is soldered to a slim flattened slip of brass, the one end of which is fastened upon a pedestal, and the other end, with an ivory button upon it, stands over a brass plate of the size of a five cent piece, without touching it. To the under side of the brass plate is soldered a wire, which extends to the other pole of the battery. The battery being now ready for action, you have but to place your finger upon the key and press it until it touches the brass plate below, and instantly the galvanic fluid flies its 80 miles. Take off the pressure of your finger, and instantly the fluid has ceased to flow.

We have alluded to the bar of iron bent in the form of a horse-shoe, at Baltimore, around which the main wires are coiled. It is perhaps not generally known, that if a bar of soft iron is encircled with copper wire wound with some insulating substance like bonnet wire, and a current of galvanic fluid passed through the wires thus surrounding the iron, it becomes instantly a magnet. If the current is made to cease, that instant the magnetism of the iron is gone. If over the ends of the two prongs of the bar of iron, where it projects beyond the coils of wire around it, a small flattened straight bar of similar soft iron is placed, being hung upon one end of a lever, and the lever supported delicately upon pivots, so as to rise and fall —it is clear that whenever the bent iron is made a magnet, the iron directly over it, upon the lever, will be attracted down with considerable force. The lever recedes when the magnetism is destroyed by means of a spring. On the other end of this lever are three steel points pointing upwards, and directly over them is a steel roller with grooves turned in it, corresponding to the three points, so that when they strike the roller by the power of the magnet, each of them falls into its own groove.

Between the three points and the steel roller, the paper passes, at an uniform rate, being drawn along by two rollers, connected with the clock work, which is driven by a weight. The paper is in rolls 14 inches in diameter and one and a half inches wide, forming a ribbon of a continuous length. This roll is placed upon a spool which turns easily upon its axis in front of the pen, as the paper is drawn off by the movement of the clock work. The alphabet is as follows:

A	B	C	D	E	F	GJ	H
.—	—...	..	—..	.	..—.	——.	....

IY	K	L	M	N	O	P	Q
..	—.—	—	— —	—.	..	.....	..—.

R	SZ	T	U	V	W	X
. . .	...	—	..—	...—	.——	.—..

Numerals.

1	2	3	4	5
.——	..—	...—	....—	———

6	7	8	9	0
.....	——..	—....	—.—	———

We have now the battery and key at Washington. The wires from Washington to Baltimore, and the magnet and writing apparatus at Baltimore. At every touch of the key at Washington upon the plate below, however rapid, the fluid passes, and ceases to pass, to Baltimore and back. At every passage of the fluid, the pen, by the attraction of the iron bar to the ends of the magnet, is brought up against the paper with such force as to indent it, and instantly recedes—so that the paper moving over the pen, receives a succession of dots, and an intermediate space. By holding the key down a little longer, a line is marked upon the paper. By this means, at the option of the operator at Washington, dots, spaces, and lines of any combination are made upon the paper in Baltimore, with perfect ease. At Washington the operator desires to inform his correspondent at Baltimore, that "The Senate is in Executive Session." Express thus: Sen. Ex. Sess. With the key he makes first eight rapid touches upon the brass plate, which at Baltimore, notifies the attendant that a message is about to be sent, by the ringing of a bell, which motion is produced in the same way as that for moving the pen. He then goes on to make ... dots in rapid succession, with spaces between them, a longer space, a dot, a longer space, a line, space and dot, thus is written ... . —. Sen.; then follow by the same mode the dots, spaces, longer spaces, and lines to finish the sentence, . .—. . Ex. ... . sess. After the sentence is completed, in the same rapid succession eight dots are made to signify that it is finished.

The clock work which moves the paper is started by the writer at Washington, by his removing, through the agency of a lever moved by the magnet, a break falling upon a smooth roller on the little fly of the clock train—and is stopped after the end of the message has run out three inches from the pen, by the break's falling upon the roller through the action of the clock work itself.

We have now described how messages may be sent from Washington to Baltimore, and it may be asked, how is an answer returned? Imagine the same machinery, as has now been described, reversed, with the exception that there is no battery in Baltimore, and the whole is complete for sending and receiving communications, either way.

We have said that from one of the poles

of the battery in Washington, a wire extends to Baltimore, and there encircling the iron bar, returns to Washington. The return wire is not absolutely necessary.

From the first commencement of the working of the Telegraph at Baltimore, but one of the wires upon the poles has been used. The wire, instead of going back to Washington after it leaves the coils, descends to the ground and is soldered to a copper plate buried in the earth in Baltimore. At Washington, a copper plate of the same dimensions is buried in the cellar of the Capitol, from which a wire is taken and soldered to the key. So that the fluid travels upon one wire from Washington to Baltimore, and returns to Washington through the earth as its conductor.

Prof. Morse has his alphabet so arranged upon a square board, that by drawing a slide, one letter is substituted for another, thus changing throughout the common alphabet. By this means a merchant in New York, may write to his correspondent in Philadelphia, without the possibility of its being intelligible to any one except the individual to whom it is addressed. Not even the writer upon the instrument in New York, or the attendant in Philadelphia, can decipher it.

With perfect ease the key can be changed every day, or at every ten words of the correspondence.

This mode of secret correspondence is more sure and safe than that of ordinary ciphers used for that purpose. Our limits will not permit us to go into a further description of other plans which Prof. M. has for condensing much in a little, when long communications are sent.

This beautiful and wonderful invention was made by Prof. Morse in 1832, five years before any thing of the kind was known in Europe. The Electric Telegraph now used in England, and invented by Prof. Wheatstone, does not record its communications. The attendant is obliged to watch the movement of several magnetic needles, upon which are the letters of the alphabet, and as they appear in sight to note them down. If one should escape his eye, it is lost and cannot be recalled. Therefore the superior advantages of Morse's American Electro Magnetic Telegraph, in recording its intelligence, without even the attendance of any one, can be easily appreciated.

The Government should possess itself at once of this triumph of American genius, and give to every city throughout the Union the advantages which may be derived from it. Thousands beholding its sure and perfect performance, awe struck and confounded, have asked, "what are we coming to!" "what next can the inventive and restless genius of man produce more beautiful and destined to work greater changes in this broad land of liberty!" May this Government foster it with all her care, and give to the Union this bond of her perpetual stability, and may she also reward her son of Bunker Hill with substance and honour.

Professor Morse presides at the Electric Register in the Capitol at Washington, and by manipulating there, writes upon the Register in Baltimore, whilst Alfred Vail, Esq., presides at the same kind of instrument in this city, and by similar manipulations, in like manner writes on the Register at Washington.

The politeness and accommodating disposition of both these gentlemen, in giving explanations and affording information to those who have visited the Telegraph, during its operations, have been spoken of in the highest and most complimentary terms.

Mr. T. C. Avery, who has charge of the batteries in this city, is also very polite and obliging.—*Baltimore Patriot.*

Experiments on Land.

By J. Whitten.

I beg leave to lay before the Society, the results of some experiments which I tried this year, in a cold, wet, and hilly part of this county, on a field of turnips, and from one of them I am convinced that all landed proprietors who deter their tenants from practising it, act very much against the interest of those, and, as a matter of course, against their own also. I mean scorching, or, as it is often called, charring, and between which and burning into ashes, there is a material difference; for in the former there is nothing scorched but the roots and seeds of weeds, which with all the tough clods are collected together by raking, and well heated until all pernicious matter is destroyed in them; insects are also killed, the land warmed, and all rubbish of the kind converted into a light manure, which is both cheap—and what is equally good, within the reach of every poor man.

In the same field I used different kinds of manure, and I found what was merely scorched, as productive as even that sown with guano, which I had carefully mixed with bog mould, at the rate of four cwt. of the former to eighteen cart-loads of the latter, to the Irish acre, and had it carefully mixed for about five weeks previous to putting it out, having been delayed that length of time in consequence of the weather being

too wet to set the bullocks to work the land; and I considered the delay only served to mix the guano better with the mould. The turnips grown on it were a good crop, when the quality of the land is taken into consideration, it being wet, cold, poor, and previously ill-managed. It gave, by calculation, forty tons to the acre—a drill of twenty-four feet long by thirty inches asunder, the turnips being a foot apart, and averaging three and a half pounds each. All kinds of them grew well on the guano, but the old Swedes and Shirvings improved—a few of which I sowed for experiment—grew under size, though of good quality, and will keep; but the other kinds being of a softer nature, are made very much so on it, and I don't think they will keep as well as when grown on any other manure.

The part of the field on which I sowed the Swedes and Skirvings improved, on farm-yard dung, proved a crop of forty-six tons, each turnip being on an average four pounds, the length of drills and distances being the same through the entire field. Being short of manure, I got bog mould put into the dung pit, in which there remained the liquid after the dung was removed. I left the mould in this for three or four days, and put it out at the rate of one hundred cart-loads to the acre; and on this there were forty-three tons to the acre, the turnips averaging three and a half pounds thirteen ounces each.

On the part which I scorched, there is a crop of fifty tons, each turnip averaging four pounds twelve ounces, and they are still growing, and none of them show the least tendency to rot or softness, which those grown on the guano do very much, and besides the difference in quantity and quality, this method of manuring such land, is of course the cheapest; and very few poor farmers can afford to pay even at the low rate of £3 to the acre, for guano, while, if allowed to treat his farm in this simple manner, he will be induced to plant this valuable crop, which would serve him in various ways, as it will give nutritious food to his cattle, add to their weight and appearance, increase their milk and butter, and materially increase the manure. Yet they lose all those benefits in consequence of not being able, as they imagine, to procure manure sufficient for the growth of turnips; while the landlord, from a very mistaken idea, prevents the tenant from scorching an almost useless piece of land, though by doing so, he would derive so much benefit and profit.—*Transactions of the Gardeners' and Stewards' Mutual Instruction Society, Dublin.*

For the Farmers' Cabinet.

Economy.

The Southern Planter very sensibly observes, that "No man can attain riches, either in land or money, without the necessary implements to work with. A frugal wife is the first and indispensable point," and after that an adaptation in all his preparations, to his means and the object to be accomplished. It is an excellent maxim in morality, and in intellectual pursuits, to aim high. If the object pursued is but little above your own level, what is the exertion required to reach it? But in setting out in life, particularly for farmers, it would seem as if the old verse was more appropriate:

> "Vessels large may venture more;
> Little boats should keep near shore."

For the farmer who gets his living from his land, and pays his rent, or diminishes his debt, there is no one word in the whole dictionary, of such mighty force and meaning, as *economy*. I take it for granted, that a man who takes a wife, whom he has vowed to protect and cherish, has long ago made up his mind and established his habits, in relation to industry and temperance, two essential virtues:—he may think too, that he has done so with respect to economy: but this is a lesson not to be learned in a day—especially by those who have been accustomed to the fulness of a parent's house, whose circumstances enable him, after his years of toil, to sit down and enjoy their fruits. If a young beginner will start where his father leaves off, he must remember that his father's purse is necessary—without it, he only marks out for himself a hard row to hoe, which it is ten to one, if he ever sees the end of. A judicious choice of tools and stock, and the exercise of a sound discretion in determining upon the crops best adapted to the markets near him, will give full play for his ingenuity and shrewdness, and I will venture to say there need be no complaint that in the farmer's calling, there is no room for the exercise and developement of mind. I have also not unfrequently remarked, where occasions have called it forth, that great reliance may be placed in the intuitive sound judgment of the helpmeet, whose very life, and every breath of it, are wrapt up in the husband's prosperity: and this confirms the judgment of the Planter above quoted, that the first indispensable requisite to a young man's success, is a good wife.

I may be charged with being something of a croaker, but these reflections have grown out of the fact, that I too frequently see young men start in life too much as if their fortunes were made, rather than their

livings to get. I have lived long enough to have my heart a little mellowed for those younger than myself, and therefore send for the Cabinet, if the editor please, these thoughts of UNCLE JOB.

Science and Agriculture.

THERE is a spirit of liberal inquiry abroad in respect to agriculture, blazing in the valleys, and beaming from the hill tops, and everywhere diffusing an invigorating, a stirring, and a healthful radiance. One of the wisest of our race, who applied his heart, as he says, to understand wisdom, has told us that there is nothing new under the sun; what is, has been; and the human mind is not likely to spring suddenly a mine of truth, which has never before been touched; nor may it expect at once to accomplish the solution of recondite problems, which have baffled the most penetrating and puzzled the most sagacious minds. It would be the grossest injustice to many men of the brightest powers, of profound investigation, and of most liberal and disinterested views, who, though they have gone out, have left a brilliant track behind them—to say that agricultural science has never before been prosecuted with zeal, intelligence, and in the spirit of true philosophy.

I am not a believer in the immediate approach of an intellectual millennium; nor can I persuade myself that philosophy has just been born into the world, and that all preceding ages were ages of comparative barbarism. It is true that the natural sciences are now prosecuted with singular advantages and success; that, in a particular manner, chemistry has, in a measure, been created within the last half century; and that it promises to render the most essential aid to agriculture. Excepting, however, the stimulus which it has everywhere given to inquiry and observation, and the exact experiments which it is prompting farmers—even in the humblest departments of agriculture—to make, it cannot as yet point to many positive practical triumphs. Sanguine as I am, in common with others, in its application to agriculture, ultimately and perhaps speedily yielding the most beneficial fruits, it has not yet even approached a solution of many of the profound secrets of nature. Whether this triumph is ever to be achieved by human sagacity; whether, with our present faculties, we are capable of entering into these deep mysteries, and of lifting up even a corner of the veil which Heaven has drawn over them, it would be idle to conjecture; but they are, as yet, a sealed book to us. In the spirit of the book of books, "let us wait at wisdom's gates, let us watch at the posts of her doors;" let us knock, earnestly hoping that they may be opened to us. Those who have gone before us have done the same, and were favoured with many largesses, which they have bequeathed to their children. Let us do them justice by gratefully acknowledging our debt to them; and not wrap ourselves up, as we are very liable to do, in the vain conceit that they knew nothing, and that we know everything.

We talk about uniting science with agriculture, as if this were the first time of asking the banns, when we may be sure the marriage was consummated years and years ago. A science, technically speaking, is a particular branch of human knowledge, which has been systematized and drawn up in regular form; its particular principles and rules defined, its department circumscribed, and its peculiar vocabulary arbitrarily established. In this respect, chemistry, botany, and mechanics are sciences; but science, in an enlarged sense, is the observation of nature—the accumulation and comparison of facts, and the deduction of inferences from them, either for the acquisition of more knowledge, or for practical application and use. I venture to assert that, without any knowledge of the particular and technical terms of art, whose utility I am not disposed in the smallest degree to deny, wherever the mind is at work there is science; and many men, who hardly know the letters of a book, are yet profound observers of nature, and may be denominated scientific agriculturists; because they are full of knowledge, which they are constantly applying to practice. Now, without any disparagement of former times, I think it must be admitted that the universal mind of the agricultural world was never so powerfully stirred as it is at this present time. We must do what we can to keep it awake and to direct the application of its powers. "Practice with science" is the terse and comprehensive motto of the Royal Agricultural Society of England. Philosophy now comes down from her high places and takes labour by the hand, that they may walk together among the works of God, and with an enlightened and commendable curiosity, "search into the causes of things." This is the highest office of the human understanding.—*Colman's Agricultural Tour.*

NEVER drink brandy when you can get wine, never drink wine when you can get beer, never drink beer when you can get cider, and never drink cider when you can get *water*.

LEANDER—SON OF DAIRY MAID.

The property of James Gowen, Esq., *Mount Airy, Philadelphia.*

LEANDER—beautiful red and white—calved 1839; got in England, by Whitaker's Prince of Northumberland; dam, imported Dairy Maid; Dairy Maid, by Harlsey, 2091; (Harlsey's dam by Pilot, 496;) dam by Rob Roy, 557; Rob Roy, by Remus, a son of Comet, 155; dam Lady Jane, by Comet, 155;—(1000 guineas)—gr. dam Cleasley-Lady, by a son of Favourite, 252; gr. g. dam, Lucinda, by Mr. Hutton's Bull of Marske; gr. gr. g. dam, Lucy, by Barningham, 56, &c., &c., &c.

Prince of Northumberland, by Sandhoe; Sandhoe, by Streamer; dam by Compton's Son of George; g. dam by Wellington, 683—gr. g. dam, Miss Hill, by Major, 397, &c., &c., &c. Prince of Northumberland's dam and Leander's gr. dam, Bellflower, bred by General Simpson,—one of the best cows of her day in all England, now about nineteen years old, (see Herd Book, vol. 2nd, p. 505.) Bellflower by General Simpson's Sultan, 1485, a son of Jupiter, 1147, and Jupiter by North Star, own brother to Comet, (1000 guineas,) and dam, Mary, (300 guineas,) sister to Windsor, 698; g. dam, Rolla, also bred by General Simpson, and by North Star, 458. For Sandhoe and Streamer's pedigree, see supplement to Herd Book, volume 3rd.

The pedigree of Leander might be extended considerably, but to breeders and those conversant with such matters, its further extension would be superfluous. Leander's sire was bred by Mr. William Jobson, of Newtown, near Wovler, Northumberland, of whom he was purchased by Mr. Whitaker; when that spirited breeder was intent upon developing the great milking properties of the "*Improved Durhams.*" His dam, Bellflower, was bred by General Simpson, a gentleman favourably known among the best breeders in England, who were aware that his stock was derived from the herd of the celebrated Charles Collings, the founder of the best class that has ever yet appeared of the Durhams. Indeed, breeders to this day, in England, are satisfied if they can get the descent direct from "North Star."

Leander then lays claim to the best blood by his sire, while on the other side, through his dam, "Dairy Maid," he takes the highest rank for purity of blood; as it is believed she possesses more of the Comet blood than any animal now living, while her beauty of form, great milking, and regular breeding, are proverbial. In vigor, form, and constitution, Leander is held to be unrivalled. He has been bred with the utmost care, is just five years old, not quite matured. The

price, thirty dollars, at which his services are held, restricts him to a very few cows, besides those of the herd of his owner. It is the opinion of the best judges, that there is no bull of his age in America, can measure with him. His calves have added greatly to his reputation.

From the number of heifers—calves of Leander—now on hand, his owner, to prevent close breeding, is obliged to keep another bull, especially for them. To remedy this inconvenience, Leander is held at private sale, and if not disposed of soon, will be offered at public sale in the fall, with other superior animals belonging to the same herd.

Soaking Seeds in Chemical Solutions.

A GREAT deal has been said and written latterly, both in this country and in Europe, particularly in Germany, respecting concentrated manures. Poudrette and Guano—the one made among ourselves—the other imported from a great distance, are claiming the close attention of the agricultural community, which we believe is ever ready to embrace enterprizes which hold out reasonable promises of advantage.

In some parts of the continent the startling doctrine has been held, and tenaciously insisted upon, that *all seeds may be so treated as to grow most luxuriantly, without any manuring of the soil in which they are to be sown.*

The article given below, in reference to this curious subject, we take from a late number of the "Transactions of the Highland and Agricultural Society of Scotland." Believing it to be of great interest to the farmer, to be acquainted with every process by which his garners may be filled—and to the political economist, to provide for the daily sustenance of the millions whose daily wants are without a holiday, we mean to revert to this matter in a future number.—ED.

THERE was perhaps no object in the exhibition of plants in the Society's Show at Dundee, in August, 1843, which attracted such general attention as the remarkably strong and vigorous oats growing in soil, exhibited by Mr. James Campbell, of the Educational Seminaries of that town. The soil in which they grew possessed no peculiar property, except that it had not been manured for eleven years. The vigor of the plants, according to Mr. Campbell, was entirely to be ascribed to their seed having been subjected to a process by which they were soaked in certain chemical solutions. Mr. Campbell has, since the show, in the most liberal and disinterested manner, placed the particulars of his process in the hands of the Society, for the benefit of agriculturists generally; and, to further his good intentions, the Society has thought it proper to publish his own explanation of the method of conducting the process of preparing the seed, as it is given, in letters, addressed, at various times, to the secretary.

The first letter contains an intimation of Mr. Campbell's intention to exhibit plants of oats at the Society's Show at Dundee, on the 8th of August, in a letter dated Seminaries, Dundee, 17th of July, 1843, which was couched in these terms: "Not being a member of the Highland and Agricultural Society of Scotland, some apology is necessary for my addressing you. Before proceeding further, therefore, I beg leave to inform you that, some years ago, I became proprietor of about 140 acres of land, some of which stood much in need of improvement. My attention has accordingly been, for a considerable time past, directed to agricultural improvement in various ways, and I conceive this may be held as an excuse for the liberty which I now take in writing you.

"Much has of late been said and written on the subject of extraneous and other manures, and a great many nostrums have been puffed off and applied with various success. Many composts have been formed, whose tendency is to yield abundant crops on certain soils, but it must still be confessed that no manure or other application of much permanency of effect, or approaching to any thing like universal aptitude to soil, has yet been produced; and, in all circumstances, the expense of manures is still very great.

"The discovery, therefore, of a process by which the cereal and other gramineous seeds might be obtained in *extraordinary* abundance, without the use of manures, is certainly a great desideratum. Now, this desideratum, however strange it may appear, I have good grounds for concluding I have attained.

"It is now a considerable time since I began to imagine that if the ultimate principles of which the proximate constituents of most of the gramineous seeds are composed, could, by any possibility, be made so to enter the substance of the seed, and at the same time not to injure its vitality, as thoroughly to imbue its texture with an excess of these principles, the end would be accomplished; and it is by doing this, to a certain extent, that I am convinced I have succeeded.

"In the spring of last year (1842) I began some experiments with oats, which were going on well, when, towards the end of July, I left them unprotected, and on returning, four or five weeks after, found, to my great regret, that my labour was lost, by the depredations of poultry and sparrows. The stems were all trodden down, and not a grain left. I have this season, however,

taken proper precautions, the whole being so secured that no bird or fowl can get access.

"The soil in which my seeds were sown has had no manure of any kind, to my certain knowledge, for the last *eleven* years. I have corn in the *natural state*, as well as others that have undergone the process which I use, so that a comparison of the results can easily be instituted. The results of such a comparison will be found altogether surprising. I shall be prepared to exhibit specimens of various grains, by different processes, on the 8th of August, in the proper place.

"I may only further mention that the greater number of the stems of the oats are as thick as small canes, and the leaves from one inch to one and one-seventh inch in breadth, of a vigorous dark-green colour—that the seed was very light, not exceeding 37 lbs. per bushel, and consisted of grains set aside for feeding poultry—that the average number of stems from thirty-three seeds, is eleven and a half or twelve to each seed sown, and the gross apparent produce between five and six hundred fold, both of oats and bear.—I am," &c.

On the 19th of September following, which was only a few weeks after the plants had been exhibited at the Society's show, Mr. Campbell resolved to disclose his process to the public, and communicated his intention in these terms, in another letter to the Secretary:—"When in Edinburgh, some time ago, I took the liberty of calling at your office, in the Highland Society's rooms, where I saw Mr. M'Donald, and stated to him that I intended to make further communications to you respecting my plan of preparing seeds so as to produce superior crops of grain.

"I have since that time resolved that my best way was to make a full disclosure of the process to the three great national agricultural institutions of Great Britain and Ireland. With this view I sent a communication, on the 8th inst., to his Grace the Duke of Richmond, who I then imagined was president of both the British Societies; but his Grace informs me that he is not now president of the Royal Agricultural Society of England, and, not being able to attend any of the meetings at Edinburgh, recommends me to apply to you, as secretary of the Highland and Agricultural Society. I therefore now take the liberty of making to you the following communication for the benefit of the agricultural interest of Scotland.

"I steeped the seeds of the various specimens exhibited, in sulphate, nitrate, and muriate of ammonia, in nitrate of soda and potass, and in combinations of these, and in all cases the results were highly favourable. For example, seeds of wheat steeped in sulphate of ammonia on the 5th of July, had, by the 10th of August, the last day of the show, tillered into *nine*, *ten*, and *eleven* stems, of nearly equal vigour, while seeds of the same sample, *unprepared*, and sown at the same time, in the same soil, had not tillered into more than *two*, *three*, and *four* stems.

"I prepared the various mixtures from the above specified salts exactly neutralized, and then added from eight to twelve measures of water. The time of steeping varied from fifty to ninety-four hours, at a temperature of about 60° Fahrenheit. I found, however, that barley does not succeed so well if steeped beyond sixty hours.

"Rye-grass and other gramineous seeds do with steeping from sixteen to twenty hours, and clovers from eight to ten, but not more; for, being bi-lobate, they are apt to swell too much and burst.

"The very superior specimens of tall oats, averaging 160 grains on each stem, and eight available stems from each seed, were prepared from sulphate of ammonia. The specimens of barley and bear were prepared from nitrate of ammonia; the former had an average of *ten* available stems, and each stem an average of thirty-four grains in the ear; and the latter an average of also ten available stems, with seventy-two grains in the ear.

"The other specimens of oats which were next the most prolific, were from muriate of ammonia, and the promiscuous specimens of oats were from nitrate of soda and potass—strong, numerous in stems, (some having not less than fifty-two,) and not so tall as either the preparations from the sulphate or muriate of ammonia.

"It was objected by some that the tallest oats were too rank, and would break down before coming to seed, but I have no fear of that, as they were strong in proportion to their height; and should there even be any ground for the objection, I am confident that a combination of sulphates of ammonia and soda, or potass, would rectify the excess of height, and render the grain equally productive.

"I have at present a series of experiments going on in the country, with seeds prepared in *seven* different ways, and sown in pure sand, and in a tilly subsoil taken six feet from under the surface, and in which there is no humus or organic matter of any kind. Along with the prepared seeds are also some

unprepared, and I expect to be able to form a comparative estimate of their growth by visiting the place in October.

"At all events, from the experiments which I have already tried, I am quite satisfied that, even *without* the application of common manures, double crops, at least, may thus be raised; and under the application of the ordinary manures, crops *ten-fold* greater than usual.

"The various salts were prepared by me from their carbonates.—I am," &c.

The results observed on inspecting the progress of the experiments with prepared and unprepared seeds, the intention of inspecting which in October, was intimated in the above letter, are thus described in a subsequent letter to the Secretary, dated Seminaries, Dundee, 16th of November, 1843:—

"I should before this time have given you, as I believe I sometime ago purposed to do, an account of the state in which I found the vegetation of prepared seeds which I mentioned I had sown about the middle of last August.

"I visited the place on the 12th of October, and found, to my great satisfaction, that the plants from prepared seeds excelled, in a very marked degree, those from seeds sown along-side of them, but unprepared. The former had from *five* to *eight* stems, while the latter had not more than *two* or *three* from each seed, and this in an exposed situation, and among earth which was taken from a considerable depth under the surface, —about eight feet—a kind of reddish till, rather adhesive, and not in the least pulverized by the influence of the atmosphere; and situate in Kinross-shire, about 400 feet above the sea.

"The season of the year was, of course, not the most favourable, but the contrast was striking.—I am," &c.

Mr. Campbell's sanction, obtained by application of the Secretary, to give publicity to his process, is given, in the following letter, dated Dundee, 11th December, 1843:—

"I am favoured with your letter of the 9th instant, and am much gratified with the very flattering reception which my communications have met with from the Directors of the Highland and Agricultural Society.

"I have no objection to the publication in the Transactions of the whole or any part of these communications, but shall, on the contrary, feel much pleased with it. I only regret that there is not now time for communicating some further particulars, but this may be done afterwards with perhaps greater propriety.

"If the Publication Committee think proper, they may mention the price at which the liquids are to be sold.—I am," &c.

In compliance with the reasonable request contained in the concluding paragraph of this letter, the following extract is taken from the latter part of a circular addressed by Mr. Campbell to agriculturists, in which he offers to supply them with his solutions, which he names his *Corn-growing Liquids*, at certain prices. The circular, after noticing the importance of such a process as the preparation of seeds, goes on to observe that—"The discoverer of this most important and invaluable process, confident, from the results of numerous experiments, of its complete success, now begs to intimate that he is prepared to supply agriculturists with his *Corn-growing Liquids* at the following prices, viz:

"For Wheat, ...	2*s.* 6*d.*	per gallon.
Barley, ...	2*s.* 0*d.*	do.
Grasses and Oats,	1*s.* 6*d.*	do.

"These liquids will keep any length of time; and the seeds, when dry, will also keep without injury. The liquids are warranted not to injure in any degree the vitality of the seed, but, on the contrary, will promote its growth in an extraordinary degree.

"One third, or even one half, less grain is required for seed than is commonly used, and twelve gallons will impregnate eight bushels of grain; for the operation may be repeated in the residual liquid with additional measures of grain, as not more than *one tenth* is absorbed in each operation.

"Particular printed instructions for using the liquids will accompany invoices. No order under twenty gallons will be supplied.

"Dudhope street, Dundee."

Opinion of Dr. Watts.—Among the accomplishments of youth, there is none preferable to a decent and agreeable behaviour among men, a modest freedom of speech, a soft and elegant manner of address, a graceful and lively deportment, a cheerful gravity and good humor, with a mind appearing ever serene under the ruffling accidents of human life. Add to this, a pleasing solemnity of reverence when the discourse turns upon any thing sacred and divine; a becoming neglect of injuries, a hatred of calumny and slander, a habit of speaking well of others, a pleasing benevolence and a readiness to do good to mankind, a special compassion to the miserable, with an air and countenance in a natural and unaffected manner, expressive of all these excellent qualifications.

Agricultural Exhibition.

Premiums proposed by the Philadelphia Society for promoting Agriculture, for the exhibition to be held on Wednesday and Thursday, the 16th and 17th of October, and the trial of ploughs to take place on Friday, the 18th, at the *Rising Sun* on the Germantown road, 3 miles from the city.

HORSES.

For the best thorough-bred stud-horse, $12
For the next best do. do. 6
For the best stud-horse adapted to the field and road, 10
For the next best do. do. 5
For the best thorough-bred brood mare, 10
For the next best do. do. 5
For the best mare adapted to the field and road, 10
For the next best do. do. 5
For the best horse colt, between two and four years old, 8
For the next best do. do. 4
For the best filly or mare colt, do. 8
For the next best do. do. 4
For the best horse colt, between one and two years old, 4
For the next best do. do. 2
For the best filly or mare colt, do. 4
For the next best do. do. 2

NEAT CATTLE OVER 2 YEARS OLD.

For the best Durham bull over three years old, $12
For the next best do. do. 6
For the best do. between two and three years old, 10
For the next best do. do. 5
For the best bull of Devon blood, 8
For the next best do. do. 4
For the best Ayrshire bull, 8
For the next best do. do. 4
For the best Alderney bull, 8
For the next best do. do. 4
For the best bull of other improved breed, 8
For the best Durham cow over four years old, 10
For the next best do. do. 5
For the best do. between two and four years old, 10
For the next best do. do. 5
For the best Durham heifer between two and three years old, 6
For the next best do. do. 3
For the best heifer of other improved breed, between two and three years old, 4
For the next best do. do. 2
For the best cow of Devon blood, 8
For the next best do. do. 4
For the best Ayrshire cow, 8
For the next best do. 4
For the best Alderney cow, 8
For the next best Alderney cow, $4
For the best cow of mixed blood, 6
For the next best do. do. 3
For the best yoke of working oxen, reference being had to their performance, 10
For the next best do. 5
For the best fat ox or steer, 10
For the next best do. 5
For the best fat heifer, over three years old, 8
For the next best do. do. 4

NEAT CATTLE UNDER TWO YEARS OLD.

For the best Durham bull between one and two years old, $8
For the next best do. do. 4
For the best bull of other improved breed, 6
For the next best do. do. 3
For the best Durham bull calf between four months and one year old, 6
For the next best do. do. 3
For the best Durham heifer between one and two years old, 6
For the next best do. do. 3
For the best heifer of other improved breed, do. 4
For the next best do. do. do. 2
For the best bull calf of improved breed, between four months and one year old, 4
For the next best do. do. do. 2
For the best Durham heifer calf between four months and one year old, 6
For the next best do. 3
For the best heifer of improved breed, do. 4
For the next best do. do. do. 2
For the best steer between one and two years old, 4
For the next best do. do. 2

SHEEP.

For the best Bakewell or Leicester buck over one year old, $4
For the next best do. do. do. 2
For the best do. do. under one year old, 2
For the next best do. do. do. 1
For the best four do. do. ewes, over one year old, 4
For the next best do. do. do. 2
For the best four do. do. ewe lambs between four and twelve months old, 2
For the next best do. do. do. 1
For the best Southdown buck over one year old, 4
For the next best do. do. do. 2
For the best do. do. under one year old, 2
For the next best do. do. do. 1
For the best four do. ewes over one year old, 4
For the next best do. do. do. 2

For the best four Southdown ewe lambs between four and twelve months old, $2
For the next best do. do. do. 1
For the best Merino buck over 1 year old, 4
For the next best do. do. 2
For the best four do. ewes, do. 4
For the next best do. do do. 2

HOGS.

For the best Berkshire boar, $4
For the next best do. 2
For the best Berkshire sow, 4
For the next best do. 2
For the best boar of other breed, 4
For the next best do. do. 2
For the best sow of other breed, 4
For the next best do. do. 2
For the best litter of pigs of any breed not less than six in number, 4

Stock entered for these premiums, cannot compete for others.

No animal that has previously taken the Society's first premium, will be allowed to compete in the same class.

Ample evidence will be required as regards the pedigree, age and character, of all stock entered for premiums.

POULTRY.

Best pair fowls, improved breed, $2
Next best do. do. 1
Best pair capons, 2
Next best do. 1

AGRICULTURAL IMPLEMENTS.

For the best plough, the merits thereof to be decided by trial, $10
For the next best do. 5
For the best Drill machine, 4
For the next best do. 2
For the best Straw or Hay cutter, 4
For the next best do. do. 2
For the best Corn sheller, 4
For the next best do. 2
For the best display of agricultural implements, 8
For the next best do. do. 4
For the best machine for crushing bones for farming purposes, 50

The ploughs intended for trial, must be at the exhibition during the whole time. Premiums will be awarded to the best ploughmen:

For the best, $5
For the next best, 3

AGRICULTURAL PRODUCE.

For the best five pounds of fresh butter, a silver butter knife, value $5
For the next best, 3
For the best firkin, or jar of salted or preserved butter, not less than 20 lbs., a silver butter knife, value 5
For the next best, 3
For the best sample bushel of wheat, $3
For the next best do. do. 1
For the best do. of rye, 2
For the next best do. do. 1
For the best do. of corn in ears, 2
For the next best do. do. 1
For the best do. of oats, 2
For the next best do. do. 1
For the best sample bushel potatoes, 2
For the next best do. 1
For the best display of agricultural produce, generally, 4
For the next best do. do. 2

A statement of the mode and manner of making and preserving the different kinds of butter, will be required of competitors.—The preserved or salted butter, must have been put up at least two months previous to the exhibition.

SPECIAL PREMIUMS.

For such animals as have received the first premium of this or any other Agricultural Society, accompanied with a certificate or satisfactory evidence thereof.

For the best stud-horse, $20
For the best bull of any breed, 20
For the best cow of any breed, 20

Any animal having before taken the above premium, and thus gained the highest distinction, will not again be permitted to contend.

A PLOUGHING MATCH,

For the trial of ploughs and ploughing, will take place on Friday, the 18th of October, at 10 o'clock.

The judges are authorized to withhold premiums, where the object is not entitled to distinction; and where but one of a class is exhibited, they will award such premium as they think it merits. Those persons who intend bringing animals for competition, must inform the Committee of Arrangement before 10 o'clock, on the first day of the exhibition.

Competition is open to the whole Union.

All stock. &c., contributed, must remain on the ground during the two days of exhibition.

JAMES GOWEN,
ISAAC W. ROBERTS,
DENNIS KELLEY,
HENRY CHORLEY,
AARON CLEMENT,
GEORGE BLIGHT,
SAMUEL S. RICHIE,
Committee of Arrangement.

☞ The above premiums of $5 will be paid by a copy of Colman's Tour. Those of smaller sums will be paid in Agricultural publications at the option of the Committee.

AARON CLEMENT, *Sec'y.*

For the Farmers' Cabinet.

Etrurian Wheat.

Respected Editor,—The six bushels of the above Wheat, furnished me by my brother H. M. Z., of your city,* and grown two successive years by Commodore Stewart, in the neighbourhood of Bordentown, New Jersey, who received it originally from Italy, was sown by me last autumn, on the same day, and in the same field, side by side with the "Mediterranean;" and notwithstanding the high character of the latter, the Etrurian endured the severity of the winter, fully as well, in a very exposed situation, and from present appearance, will turn out to be as early a wheat, having blossomed precisely at the same time; and although it was put into the ground earlier than we are in the habit of sowing wheat, and consequently liable to be attacked by the fly, there was not the least trace of the insect to be found in any of it.

At first I was somewhat fearful, that this wheat would turn out to be nothing more than the *Wabash*, which is late in coming to maturity, and always subject to the *rust;* but now I am perfectly satisfied that it is entirely different, and from its early ripening, and from the size of the ear or head, it promises to be a productive kind, differing materially from all the *white wheats* I have ever seen, which generally have meagre-formed heads.

Should this interesting variety continue to improve, or even maintain its present character, Commodore Stewart will certainly deserve the gratitude of his country, in having been the procuring cause of its introduction.

Respectfully,

Dan'l. Zollickoffer.

Carroll co., Maryland, June 1, 1844.

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

Philadelphia, Seventh Month, 1844.

Among the minutes of the Philadelphia Agricultural Society, on the 5th ult., we find the following:—

"Mr. D. Sharwood, member of the Royal Agricultural Society of England, personally communicated to the Society his observations on the state of agriculture, stock, &c., during a recent journey to the State of Ohio, which was highly favourable and flattering to this country. He stated that he had seen as fine Short-horned cattle in this country, as he had ever seen in England; and that as to economy in feeding, our farmers were far before those of his own country. Our system of manure-making he regarded as very deficient, and susceptible of great improvement. He found many of our barn-yards badly located for collecting manure, and preserving the liquid, which is the great producer of manure. Our stock, too, was not as well provided with shelter, in many instances which came under his notice, as their health and the interests of the farmer required."

The first two numbers of the PLOUGHBOY, published monthly, at Cincinnati, Ohio, by A. Randall, have been received. It contains much valuable matter, and will no doubt be a useful auxiliary in promoting the agricultural interests of the West.

At the Annual meeting of the New Jersey Horticultural Society held on the 12th ult. at Trenton, the following officers for the ensuing year were duly elected.

Richard S. Field, Princeton, *President.*

Wm. Wright, Newark,
Richard Fetters, Camden,
James Langstaff, Mount Holly,
George W. Doane, Burlington,
Samuel R. Gummere, Trenton,
Roswell L. Colt, Patterson,
Vice-Presidents.

Ira B. Underhill, Burlington, *Treasurer.*

William White, Lawrence, *Cor. Secretary.*

William W. King, Burlington, *Rec. Secretary.*

We have repeatedly called the attention of our readers to the subject of concentrated manures, lime, gypsum, bone dust, &c. We are entirely of the mind that the latter—bone dust—is not appreciated in this vicinity as it deserves to be. Why should thousands of tons of bones be annually sent from this city to fertilize the fields of the British farmer, when we certainly need every thing of the kind on the sea-board, to enable our farmers to compete, not only with the British agriculturist, but with those also of our own interior and far West, where their cheap, fertile, and virgin soils, enable them to produce much more abundantly and cheaply than we can, and whence the facility of transportation makes between their markets and ours, scarcely a difference of a cent a pound in their bacon, and but a small difference in the price of their wheat. With a view to a particular branch of this subject, our Agricultural Society at its meeting on the 3rd inst., passed the following: "Resolved, that the committee of arrangement be authorised to offer a premium of fifty dollars, for the best Machine for crushing bones for farming purposes, with the addition of the necessary horse power. Said machine to be capable of being used by farmers; and with the horse power, not to cost over $300."

From our exchange papers, which come to us from all parts of the country, we perceive that the crops of wheat are very generally spoken of as good. In some neighbourhoods, the rust and fly have been at work.

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* See page 63 of current volume.

IMPORTANT AND VALUABLE IMPROVEMENT IN BEE-HIVES.

The invention now presented to the public, is patented in the State Department at Washington, and has secured the approbation of hundreds of practical and scientific gentlemen. Its principles are so evidently correct, and are founded upon such strong dictates of humanity, that while the wilful destruction of these interesting insects is no longer necessary, an amazing increase in the production of their nectared stores is a certain reward to the patrons of this improvement. Among its advantages are first, the facility of swarming the bees; second, its protection against every annoyance from the miller moth, their fatal foe. Third, its self-cleansing and purifying qualities.—Fourth, the ease with which the accumulated honey can be removed, without the destruction of a single insect, or without disturbing the bee bread, the young bees, or empty comb. Fifth, the means of noting distinctly the operations of the whole family, the process of manufacturing their honey, the economy of their government, &c.; and lastly, the perfect ventilation of the hives, through the advantage of which, the health of the whole colony is evidently promoted.

Since the introduction of these hives, a large number have been ordered by sundry individuals, all of whom have expressed their full and entire satisfaction in the improvement. Indeed, not a solitary instance of dissent from the claims which are made in their favour, has come to the knowledge of the patentee, but on the contrary, voluntary testimonials in their favour have repeatedly been tendered.

Every information will be cheerfully given by the subscribers, in relation to this Hive, and orders will be promptly executed.

For Pennsylvania, William M. Laning, No. 169, Callowhill Street.

For New Jersey, William Nichuals, N. W. corner of Fifth and Wood streets.

For Delaware and Maryland, J. E. Hollingsworth, Wilmington, Del.

References.—Dr. Levis, Sixth street, near Willow. J. J. Smith, Esq., Franklin Library. Archibald Campbell, Esq., Schuylkill Fifth and Spruce streets. William Hancock, Esq., Vine street, above Third.

Philadelphia, July 15th, 1844.

A cut of the above Hive, and description of it, will be found on page 312, of the current volume.—Ed.

The following premiums will be awarded by the Pennsylvania Horticultural Society at the Stated meeting on the 20th of next month.

For the best peaches, not less than half a peck,	$2
For the best pears, do. do. do.	3
For the next best pears, do. do.	2
For the best plums, not less than two dozen,	2
For the best figs, not less than one dozen,	2

The American Agriculturist's Almanac, for 1845, has been received, containing besides the usual matter of those annuals, a good amount of reading, suitable for the farmer. It is edited by A. B. Allen, of the Agriculturist, and published by Saxton & Miles, New York, and Thomas, Cowperthwait & Co., of this city.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	$4 00
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	60
Complete sets of the FARMERS' CABINET, half-bound, 7 vols.	5 75
BEVAN on the HONEY BEE,	31½
BUISTS' ROSE MANUAL,	75
SKINNER'S CATTLE DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
JOHNSTON'S Agricultural Chemistry,	2 25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	12½

As well as his larger works on Chemistry and Agriculture.

Subscriptions will be received for Colman's Agricultural Tour in England and on the Continent.

☞ We are prepared to bind books to order.

PRONG OR POTATOE HOE.

This is a new article, and much approved; it is found to be one of the most useful though simple articles that are used on a farm. It was invented and used in the first instance for digging potatoes, but was afterwards found to be as useful for planting and hoeing as for digging, and likewise for every other purpose for which a hoe can be used. It is used to the most advantage in stony or rocky land, and in planting new land. It is likewise a good garden hoe, being one of the best tools a gardener can have in use, in working between rows of vegetables, and digging around young trees.

This article may be procured at the Seed and Implement Store of D. O. Prouty, No. 194½ Market street, Philadelphia.

We saw green corn in market for the first time this season, on the 2nd instant. Abundant supplies of vegetables and fruits, common to the season, and of the best quality, have been furnished by our country friends.

The fifth number of the Encyclopedia of Chemistry, in course of publication by Carey & Hart, and edited by James C. Booth and Martin H. Boyé, has been received.

☞ SHORT ADVERTISEMENTS, ☜

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line.

COATES' SEED STORE,

No. 49 Market Street, Up Stairs:

FRESH TURNIP SEED,

Of the most approved varieties for Cattle and Table use, with a complete Assortment of

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties—Bird Seeds, &c, JOS. P. H. COATES,

Successor to George M. Coates.

Seed and Implement Ware-house.

The subscriber has on hand and for sale, a few pounds of *Dickson's Improved Hybrid Ruta-baga seed;* this turnip is larger, better flavoured, and more productive than the common kinds. Garden, grass, and flower seeds of all kinds, warranted fresh. Also, Straw-cutters of eight different patterns; among which are Hovey's & Conklin's, new and very superior—price from $15 to $25 each. Turnip Drills, $2 50 to $8. Corn-Planters of various patterns. *Horse Rakes*, Cultivators, Churns, Centre-draught Ploughs, from $4 50 to $13 each. Side-hill, Subsoil, Double-mould, and Shovel Ploughs. New York Ploughs, from $2 to $6 each. Also good Scythes, various makers, 75 cents to $1 each. Scythe Sneeds, from 37½ to 87½ cents; Rakes, Forks, made of cast-steel, a superior article—Grass Hooks, Brier Hooks, Potatoe Hoes, Brier Scythes, Cow Chains, Grain Cradles, very cheap—Garden-lines and Reels, &c., &c., for sale at the lowest prices. Persons in want of implements or seeds, are invited to call at the Seed and Implement Ware-house, No. 194½ Market street, between Fifth and Sixth streets, Philadelphia.

D. O. Prouty.

May 15th, 1844.

PHILADELPHIA SEED STORE,

No. 23 MARKET STREET.

M. S. Powell keeps a constant supply of Clover and other Grass Seeds. Field Seeds, consisting of prime Seed wheat, Buckwheat, Millet, Oats, Corn, Rye, &c.

☞ GARDEN AND BIRD SEEDS generally.

July 15th, 1844. tf.

POUDRETTE—a valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the Farmers' Cabinet, No. 50, N. Fourth street, or at the manufactory, near the Penitentiary on Coates' street. Present price, $1 75 per barrel, containing four bushels—$5 for three barrels—$15 for ten barrels, or thirty cents a bushel. Orders from a distance, enclosing the cash, with cost of porterage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. Farmers to the South, and in the interior, both of this State and New Jersey, are invited to try the article. As a manure for turnips, buckwheat, &c., it has been used to great advantage.

D. K. Minor.

The quantity of rain which fell during the Sixth month, (June,) 1844, was a little more than three inches and a third. ..... 3.351 inches.

Penn. Hospital, 7th mo., 1st.

GUANO.—The attention of farmers is respectfully requested to the Guano as a manure, for sale by the subscriber, No. 19 South Wharves, over the Baltimore Steam-boat office, or at the office of the *Farmer's Cabinet*,—by the cargo, bag, or less quantity: it is superior in all respects as a manure, to all now known.

July 15th. George A. Leisau.

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THE FARMERS' CABINET,

IS PUBLISHED MONTHLY BY

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It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

Terms.—One dollar per annum, or five dollars for seven copies—*payable in advance.*

All subscriptions must commence at the *beginning* of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For five dollars paid in advance, a *complete set* of the work will be furnished in numbers, including the eighth volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly *half-bound and lettered.* Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage: that is, one cent on each number within the state, or within one hundred miles of the place of publication out of the state,—and one cent and a half to any other part of the United States—and Post Masters are at liberty to receive subscriptions, and forward them to the Publisher under their frank—thus affording an opportunity to all who wish it, to order the work, and pay for it without expense of postage.

Joseph Rakestraw, Printer.